



WHITEPAPER SERIES

Internet Exchange Migration Strategy

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Introduction

The growing popularity of client/server computing has prompted most companies and organizations to move from host-based electronic mail (e-mail) systems to LAN-based client/server environments. In fact, a number of companies are already migrating from e-mail systems like Lotus cc:Mail and PROFS to such environments as Lotus Notes, Microsoft Exchange, Oracle Interoffice, Novell GroupWise, etc. There could be several reasons why these companies would want to migrate from host-based systems to other e-mail environments. Some companies might have acquired other companies that use host-based environments and need to move e-mail messages and other documents to a common platform. Others may want to take advantage of the more advanced features of client/server e-mail systems.

The Migration Process

There are several factors that must be considered in making the transition from a host-based environment to a client/server e-mail platform. It is certainly not an overnight procedure and there is more to consider than simply the movement of mail directories and addresses. One of the major issues that must be addressed before migration starts is how to move data stored in the legacy system to the client/server platform with the minimum of disruption for the users and with the minimum effort on the part of the system administrator.

Since the migration process requires much planning and could possibly take weeks or more to accomplish, the usage of the host-based and client/server systems will overlap. Thus, the e-mail administrator must consider this process not merely as a migration but as a coexistence of the two mail systems. To accomplish this, the administrator needs a migration path that offers:

- ***full control over the migration process*** – the administrator must develop a plan to take total control of the migration process. This plan must allow them to choose the number of users to migrate at any one time and to migrate people who can be logically grouped together, whether by department, geography, or some other criteria. The plan should also support detailed auditing of the process so the administrator can verify what information have been migrated.
- ***nondestructive migration*** – the path must support nondestructive migration so that if the migration process fails for any reason, the administrator can still move users back to the old system.

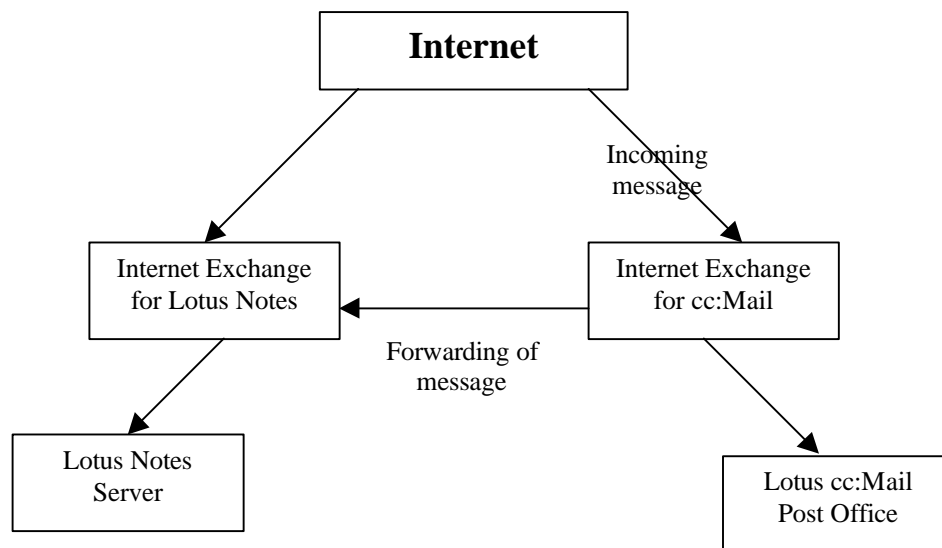
Internet Exchange

Internet Exchange is a family of electronic mail gateway/MTAs that not only connects Lotus cc:Mail and Lotus Notes LAN e-mail environments to the Internet and/or to private TCP/IP-based LANs, but also includes migration functionality (beginning with

version 3.0) to resolve issues related to the conversion from cc:Mail to Notes or to other messaging environments, as well as mail address aliasing within the gateway.

With Internet Exchange, users of Lotus cc:Mail can now seamlessly cross over to Lotus Notes or other messaging environments without disturbing their messaging requirements. Both cc:Mail and Notes environments can be kept running concurrently for a “teething-in” period.

Figure 1 – Address Migration



From the Lotus product viewpoint, the Notes environment needs to be configured with user accounts, directories, mail boxes, etc. This can be accomplished by the *cc:Notes* migration utility offered by Lotus. With the Notes environment in place and the new **Internet Exchange for Notes** installed, users can begin moving over to their new mail system using *cc:Notes*. The process will take some time, depending on the number of users to be migrated. Not only will the process be time-consuming, but users will want to use the old cc:Mail client while they familiarize themselves with the new mail system.

This could pose a serious problem to the mail administrator: there might be users still running cc:Mail, others who have shifted to Notes, and others yet opting to use both systems concurrently. Thus, appropriate addressing for each user to be able to receive mail from the Internet and choose what information to display in the “From” field in the outbound message become somewhat difficult.

To overcome the limitations of *cc:Notes*, **Internet Exchange** is designed with a coexistence functionality that enables the administrator to deal with all migratory situations until the shift to Lotus Notes is successfully completed. Once the migration process has been completed, the system administrator can disable the old mail system so all incoming messages are sent directly to the new mail platform. This is carried out

by simply changing the name server so that the MX records of the domain will point to the Notes gateway (see example below).

Case Study: Migrating from Lotus cc:Mail to Lotus Notes using Internet Exchange

Among the main reasons why a number of organizations are migrating from Lotus cc:Mail to Lotus Notes are:

- Lotus Notes offers the benefits of a groupware, including enterprise-ready, client/server messaging, global access and distribution of the World Wide Web, a document database, and a platform for the rapid development and deployment of collaborative groupware applications.
- Lotus Notes supports all major operating systems, including Microsoft Windows, Sun Solaris, Windows NT, IBM OS/2 Warp, and Apple Mac OS.
- Lotus Notes offers security and features a database replication engine that copies and synchronizes information among distributed servers.
- Lotus cc:Mail will eventually be phased out by Lotus Development Corp.

In short, Lotus Notes is a client/server, groupware development platform built around a messaging system, a document database, and a database replication engine.

Migrating Internet Addresses to Internet Exchange for Lotus Notes

When both cc:Mail and Notes gateways are fully operational, the mail administrator can implement Domain Forwarding to move all users in a sub-domain over to Lotus Notes. All incoming mail to the cc:Mail **Internet Exchange** gateway for a particular sub-domain is redirected over to the Notes **Internet Exchange** gateway and promptly forwarded to the respective Notes user. All incoming mail for that sub-domain can also be copied to the local cc:Mail Post Office as well, allowing co-existence between the two systems for an intermediate period. This feature can be revoked when cc:Mail support is discontinued.

Per User migration, on the other hand, defines the new Internet address for the Notes gateway for individual users only. Under this scenario, the mail administrator can choose which individual users will move over to Lotus Notes and whether they will continue to receive a local cc:Mail copy of incoming mail. Once users are already familiar with Notes and transition is fully completed, the administrator can suspend the cc:Mail copy.

When configuring migration on a Per User basis, the mail administrator has the option to set up a mailing list for incoming mail: mail directed at a particular address can

be forwarded to multiple destinations, enabling an incoming mail address list. This will enable users to receive mail from Lotus Notes while using a different client off-site. It is also useful for organizations considering additional mail application options.

Per User Migration

From the *Setup* menu, choose the *Users* tag (see Figure 1). A list of current users is displayed, showing users' cc:Mail user name and corresponding Internet addresses. To migrate a user to **Internet Exchange for Lotus Notes**, highlight the user to be migrated and press the *Edit forwarding address list* button. The *Forwarding addresses for <user>* window will appear where the user's new address is entered in the *Forward address* field. Press *Add* to update the new forwarding address to the list. This entry can be deleted or updated at a later time. Press *OK* to apply these changes.

To enable mail to continue to be directed to the current local cc:Mail account as well as forwarded to the Lotus Notes **Internet Exchange** gateway, check the *Deliver local copy* box. In addition, checking the *Use forward address for outbound mail* box will cause the "From" field in the header of outbound messages to include the users' forwarded Internet address on Notes rather than their previous local Internet address on cc:Mail.

NOTE:

Adding more than one Internet address to the list of forwarding addresses causes incoming mail to be redirected to all addresses specified. It is therefore possible to enable a simple mailing list for incoming mail. The *Swap* button here can be used to alter the order of domains as they appear in the list. This can be useful when the forwarding address is included in the "From" field of outbound message headers because only the first address of the simple mailing list is included in the header.

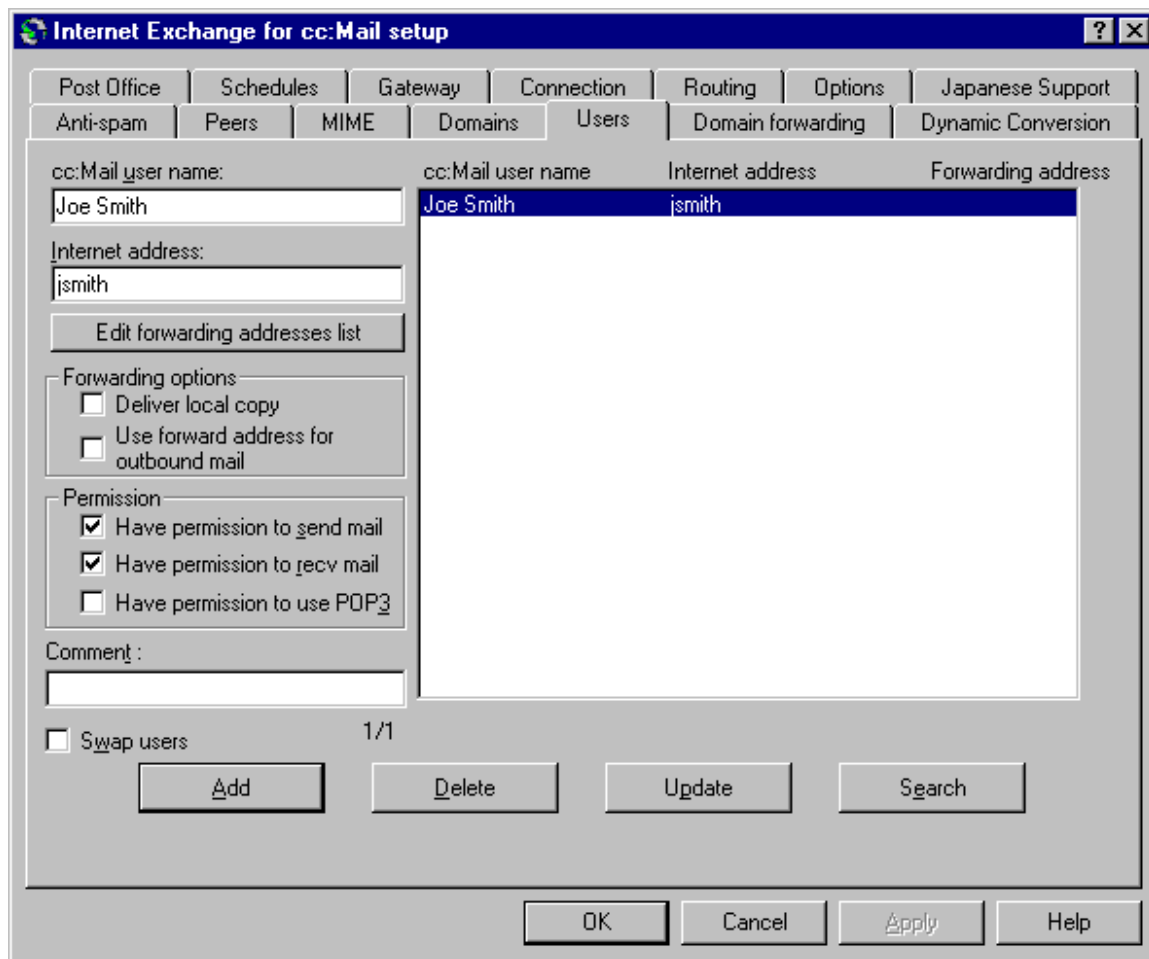


Figure 1

Domain Forwarding Migration

Domain Forwarding Migration is used for migrating all incoming mail addressed to users in a specific domain. From the *Setup* menu, choose the *Domain Forwarding* tag (see Figure 2). Then enter the domain's Fully Qualified Domain Name (FQDN) in the *Recipient domain* field. The FQDN of the new **Internet Exchange for Lotus Notes** gateway should then be entered in the *Forwarding domain* field. When finished, pressing the *Add* button will append the FQDN to the list of destination domains. A FQDN consists of the gateway's host name together with the organization's domain name in the form <hostname>.<domain name> (i.e.: cchost.company.com).

To enable incoming mail to be directed to the current local cc:Mail account as well as forwarded to the Lotus Notes gateway, highlight the appropriate domain and check the *Deliver local copy* box. Press *OK* to apply the changes.

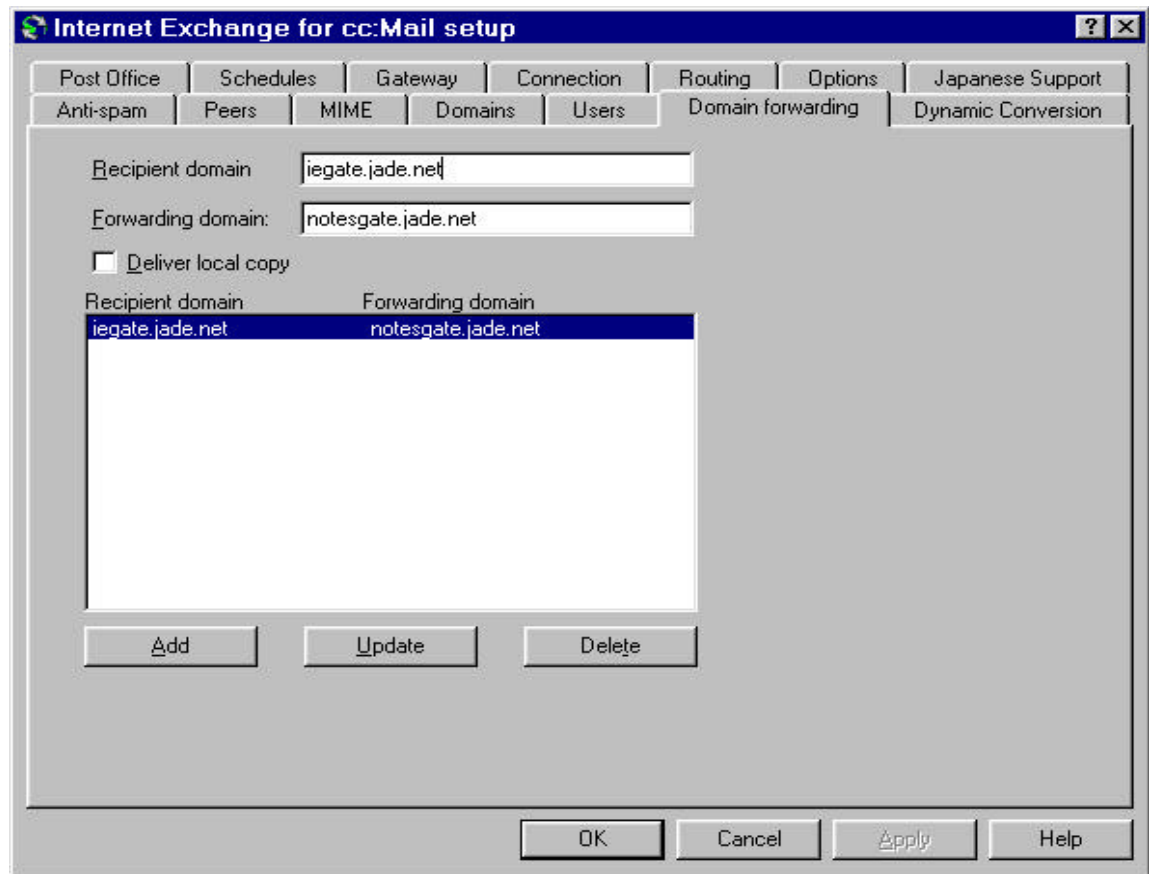


Figure 2

Note: For Domain Forwarding there is no on-line option similar to the *Users* configuration window's *Use forward address for outbound mail* featured in Per User Forwarding. It is possible to achieve a similar result by manually editing the *IMA.INI/IELN.INI* file found in the Windows directory. To do this, the following line must be added to *IMA.INI/IELN.INI*:

```
[options]
UseForwardAddress=YES
```

This globally sets the "FROM" field in the header of gateway users' outbound messages to include the users' forwarded Internet address rather than their previous local Internet address. By default this line does not exist, and the default is *NO*.

It is possible to concurrently enable Per User and Domain Forwarding migration for forwarding addresses of individual users. In this case when messages arrive and the gateway is determining where to forward an address, the Per User forwarding takes precedence over Domain Forwarding.

Note: Another option, manually configurable by modification of the *IMA.INI/IELN.INI* file, causes the gateway to check for the existence of entries in the Domain Forwarding Database (where mappings between recipient and forwarding domains are stored) *if* no User Address Forwarding information has been found (without this option set messages

are sent directly to the cc:Mail user account). In case the gateway finds relevant information in the Domain Forwarding Database the mail is forwarded accordingly; otherwise it is sent to its cc:Mail alias as normal. To enable this option the following line must be added to *IMA.INI/IELN.INI*:

```
[options]  
TryDomainForwardingIfAliasLookupFail=YES
```

For received inbound messages, the gateway checks for entries in the Domain Forwarding Database; this takes place only after it has been determined that the recipient cc:Mail user has no user address forwarding configured (configured in the *Users* window). By default this line does not exist, and the default is *NO*.

Example

Scenario:

A company, xyz.com, is using Internet Exchange for cc:Mail to handle their enterprise e-mail traffic. The Internet Exchange for cc:Mail gateway is installed on the machine called ieccmail.xyz.com. Currently, the user in IECM is setup as shown in Figure 3.

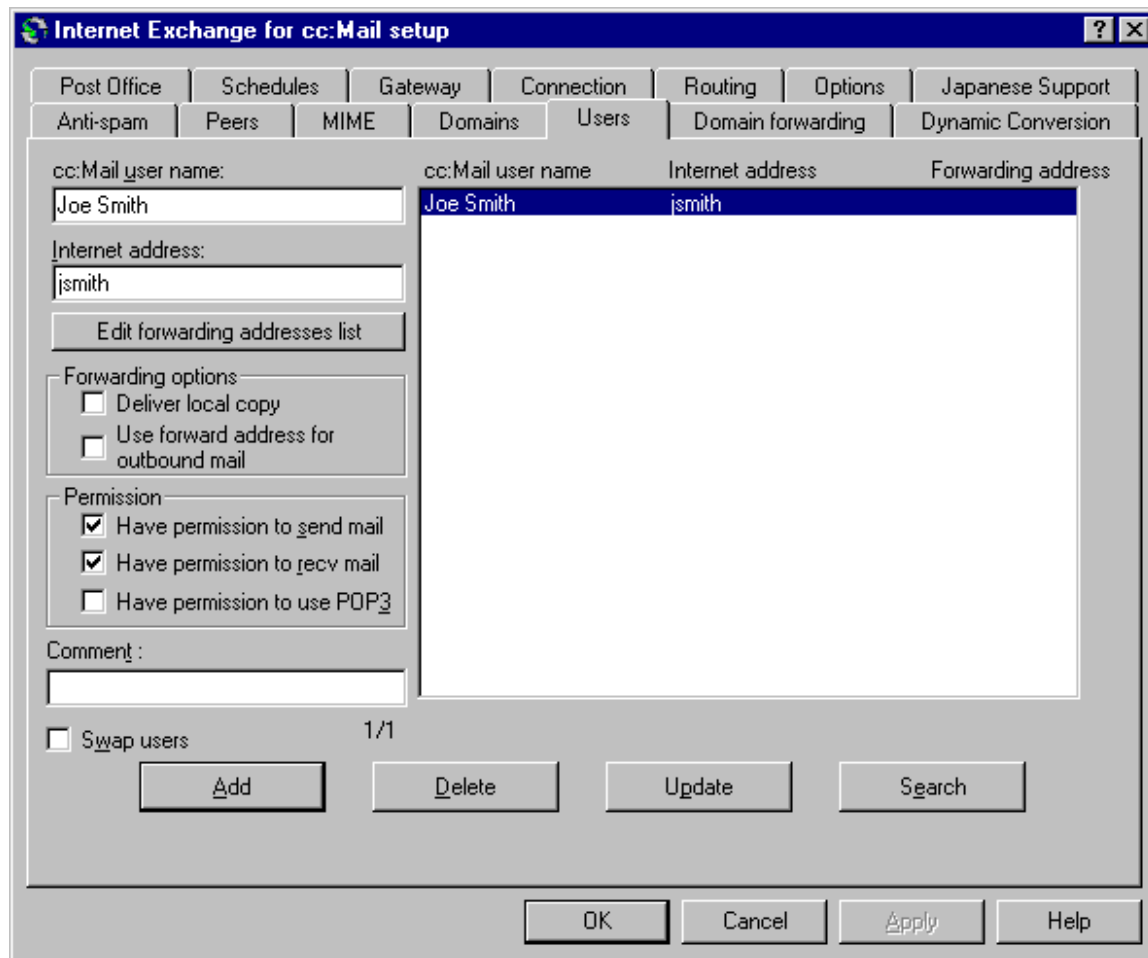


Figure 3

In the options setup page, the administrator has disabled the Use host name in addresses option (see Figure 4). So, all his cc:Mail users will have an Internet address in the form:

e.g.

Joe Smith ⇔ jsmith@xyz.com

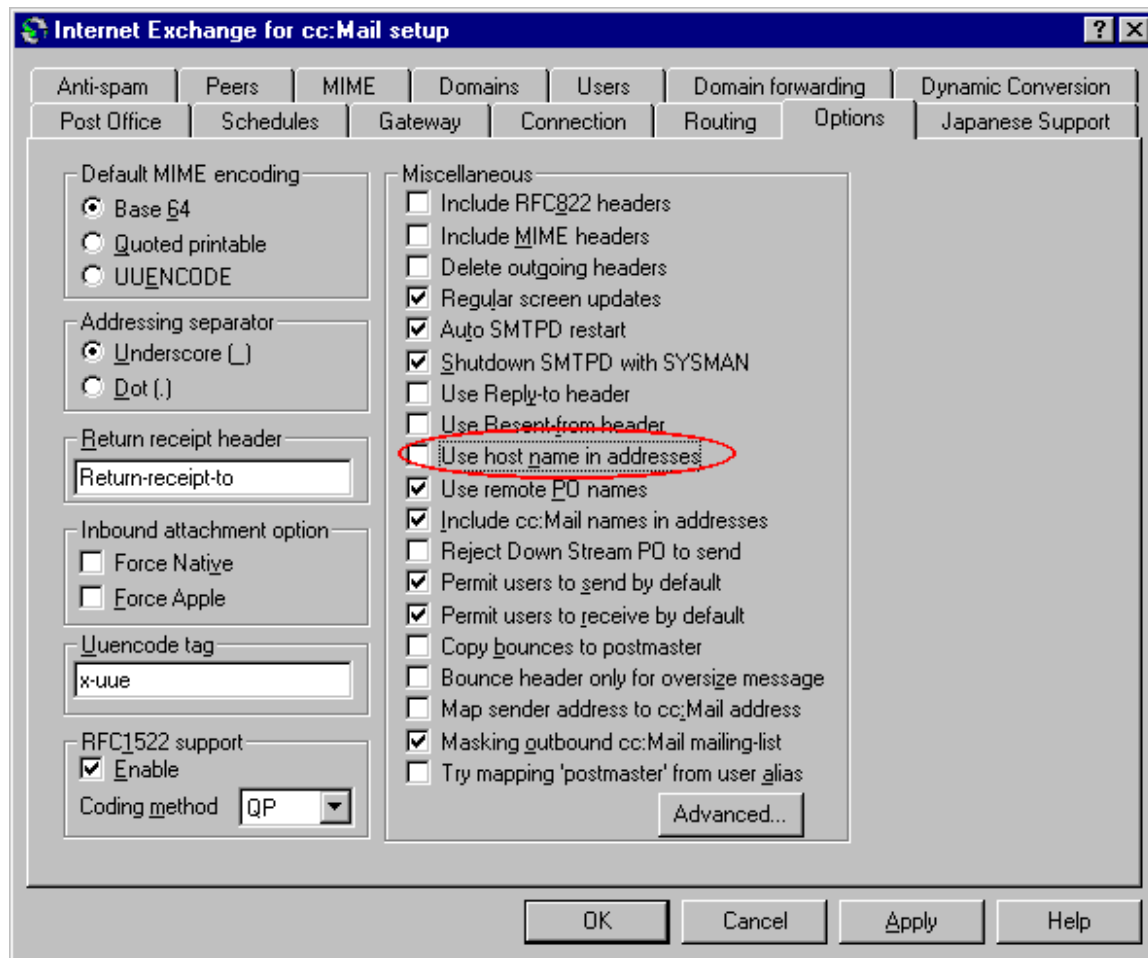


Figure 4

Now, the company wants to smoothly migrate their user from cc:Mail to Lotus Notes. The system administrator chooses IMA solution to implement the migration plan. He needs to first set up a second machine to run Internet Exchange for Lotus Notes and use the migration tools within Internet Exchange for cc:Mail and Lotus Notes to deploy the migration. The problem he is now trying to solve is how can to set up Internet Exchange such that:

- inbound mail will be sent to both cc:Mail and Notes gateway?
- the same address naming as in the cc:Mail gateway can be used even if the mail is sent from Lotus Notes?

Solution:

Assume that the DNS is configured in a way that all mail addressed to xyz.com will be sent to the MX host (ieccmail.xyz.com) that runs Internet Exchange for cc:Mail. The administrator has to modify the user setup as shown in Figure 5.

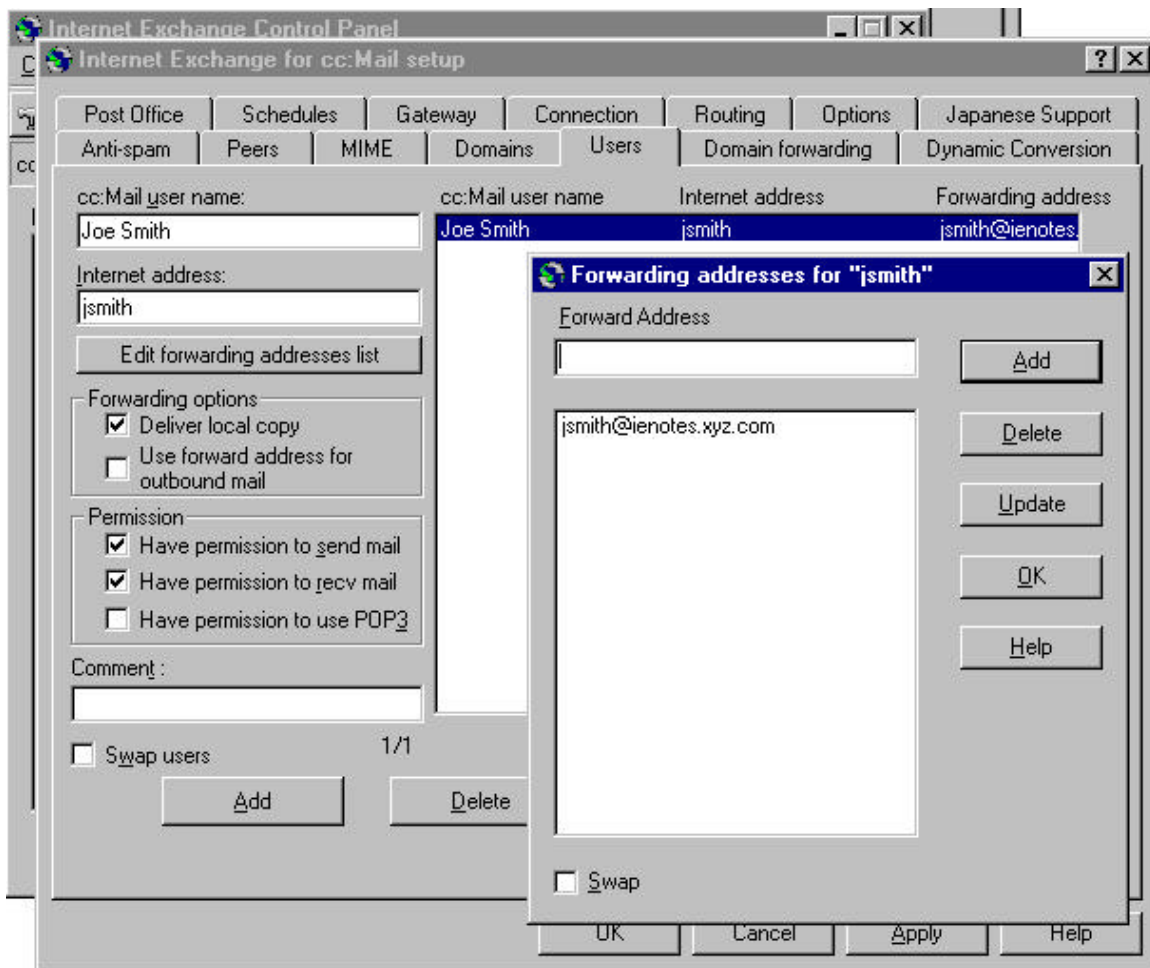


Figure 5

On the user setup page, the administrator has to define the forwarding address, which is `jsmith@ienotes.xyz.com` for user Joe Smith. Make sure that the option "Deliver local copy" is checked if you want incoming mails to be delivered locally as well as forwarded to the Internet Exchange for Lotus Notes gateway. The second machine called `ienotes.xyz.com` is responsible for handling mail between Internet and Lotus Notes.

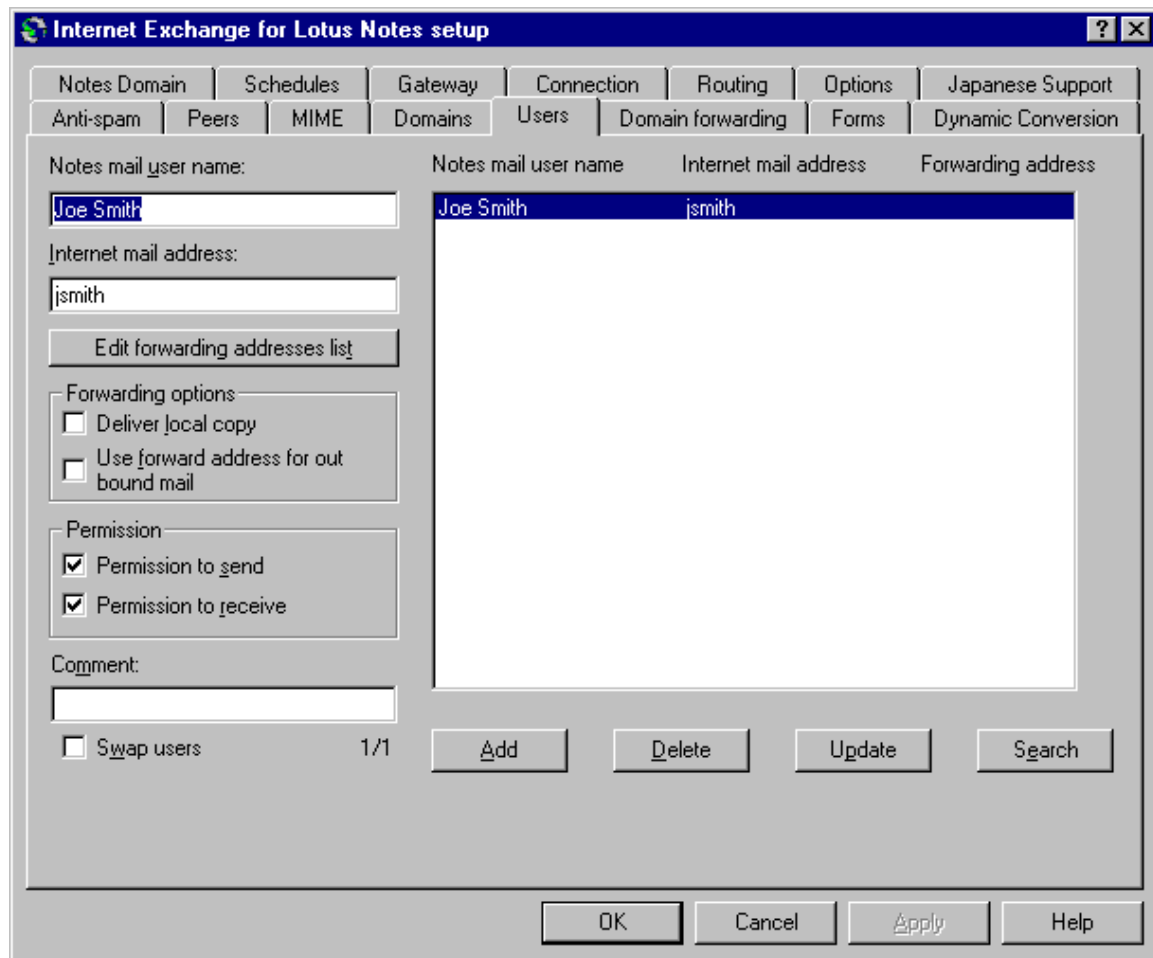


Figure 6

On Internet Exchange for Lotus Notes, the administrator has to simply define the mapping for user Joe Smith as shown in Figure 6. He should also make sure that the option Use host name in addresses under the Options page is unchecked.

Once the setup is done in both Internet Exchange gateway, all incoming mail will first go to Internet Exchange for cc:Mail gateway, i.e. leccmail.xyz.com. A copy of that message will be forwarded to ienotes.xyz.com that runs Internet Exchange for Lotus Notes. When the user Joe Smith replies to the mail received in Lotus Notes, he will appear as jsmith@xyz.com to the intended Internet recipient. Once the user Joe Smith gets used to Lotus Notes, the administrator can disable the delivery local copy option for him in the cc:Mail gateway so that no more incoming mail will be stored inside his cc:Mail mailbox.

When the migration process has been completed, the system administrator can disable leccmail.xyz.com so that all incoming mail will go directly to ienotes.xyz.com. All he has to do is configure the DNS in such a way that all messages addressed to xyz.com will go to ienotes.xyz.com (this machine will serve as the new MX host).

Defining an Internet Alias Address

If the administrator wants to configure Joe Smith to use another address, say jsmith@xyz.net, as the sender address in the Lotus Notes environment instead of jsmith@xyz.com, all he has to do is define two Internet aliases for Joe Smith. One will be used for inbound mail while the other will be used for outbound mail. When multiple Internet aliases are defined for a single LAN user (Lotus Notes in this case), Internet Exchange will use the first one listed among the others to do outbound address conversion. So, in this case, you should define the mapping as shown in Figure 7.

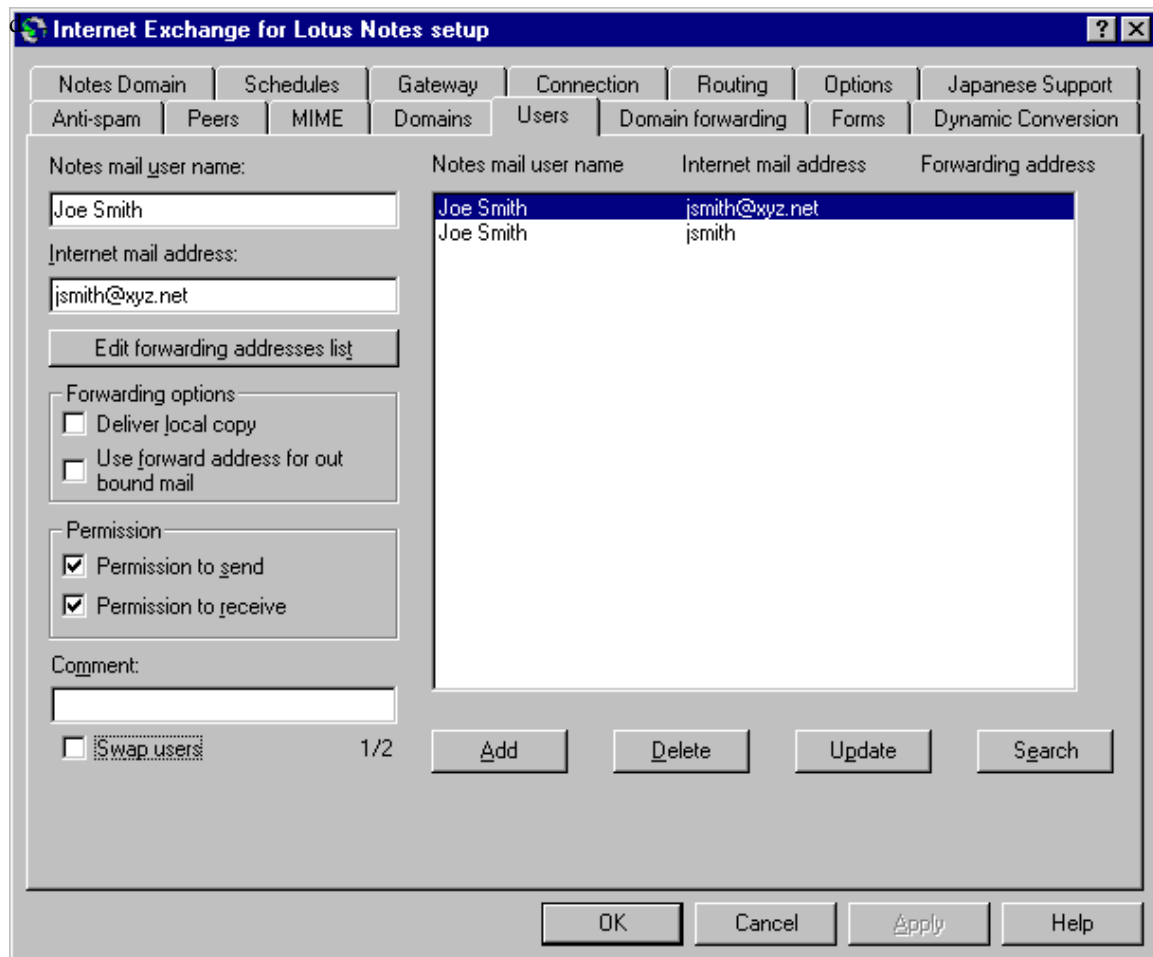


Figure 7

From the above diagram, two Internet aliases are defined for the user Joe Smith. When mail addressed to jsmith@xyz.net comes in, the gateway maps the local part to Joe Smith and delivers the mail to his mailbox. When Joe Smith sends out a message, Internet Exchange will use the first entry jsmith@xyz.net as his Internet address. If the DNS is setup such that mail addressed to xyz.net will be sent to ienotes.xyz.com, all replies to Joe Smith will go to the Notes gateway directly. Of course, the administrator has to add xyz.net under the alternate host/domain list of Internet Exchanges for Lotus Notes gateway.

Conclusion

Migrating from one e-mail platform to another is a time-consuming and costly process. According to a study conducted by Collaborative Research, to move 10,000 users from Lotus cc:Mail to Microsoft Exchange, an average organization will have to spend \$4.1 million. To migrate the same number of users from cc:Mail to Lotus Notes/Domino will cost \$1.4 million. In spite of this, many organizations and companies consider moving to a new mail platform as a necessity for several reasons.

Thus, system administrators are under pressure to choose a migration tool that will offer optimum flexibility at a reasonable cost. Aside from the cost, the choice of a migration tool is also driven by other factors. These include the ability of the tool to support coexistence functionality, nondestructive migration, and administrative control over the migration process. But a good migration tool alone does not ensure that the migration process will be completely successful. A well-planned migration strategy that will take into account the different issues involved in the process must also be developed.